

APPENDIX A

WALTHER SIDEWALK GEOMORPHOLOGY AND PHASE I ARCHAEOLOGICAL SURVEY

**New Castle County, Delaware
Walther Sidewalk Project
Geomorphology and Phase I Archaeological Survey
Management Summary**

by

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Principal Investigator
and
Barbara J. Gundy**

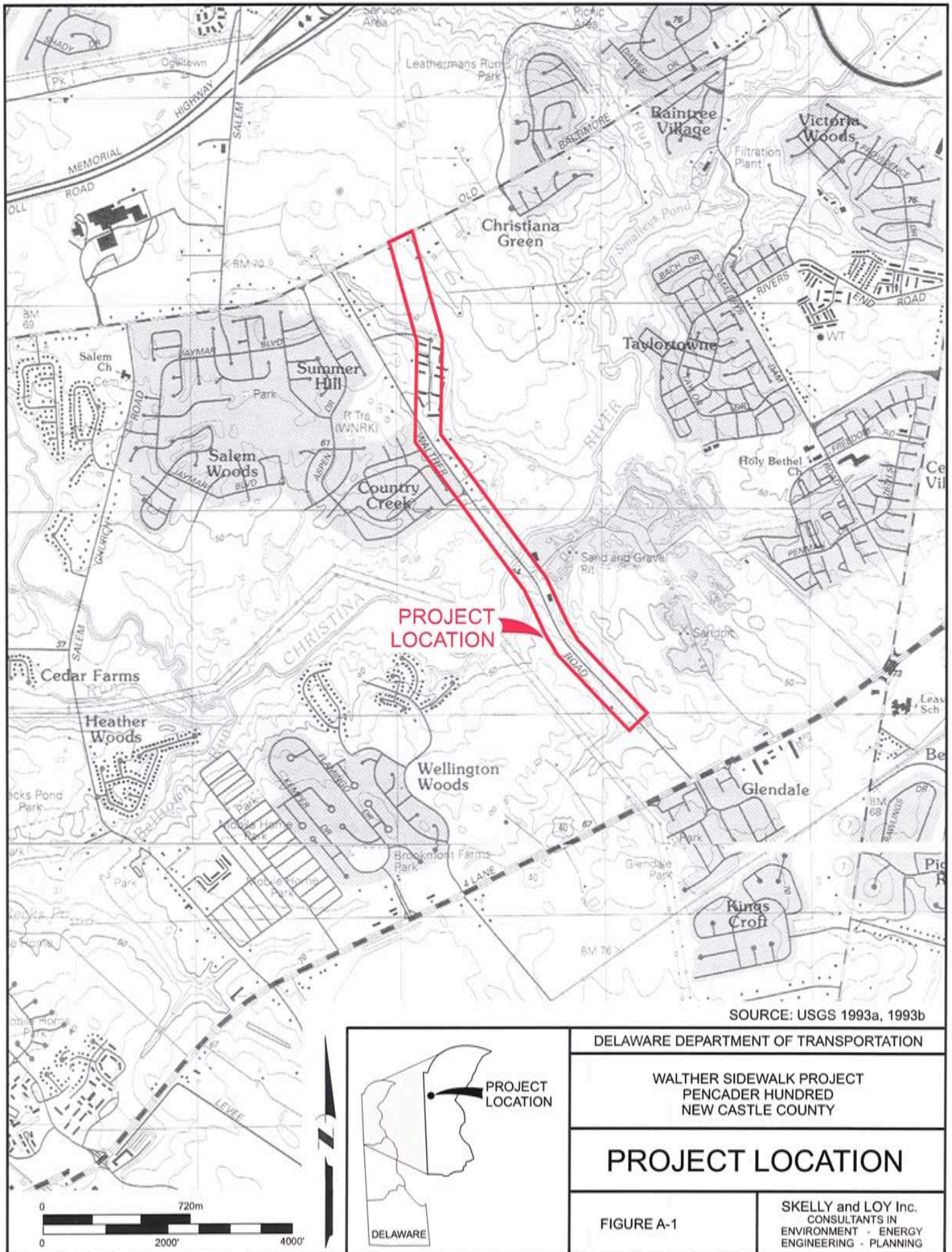
1.0 Introduction

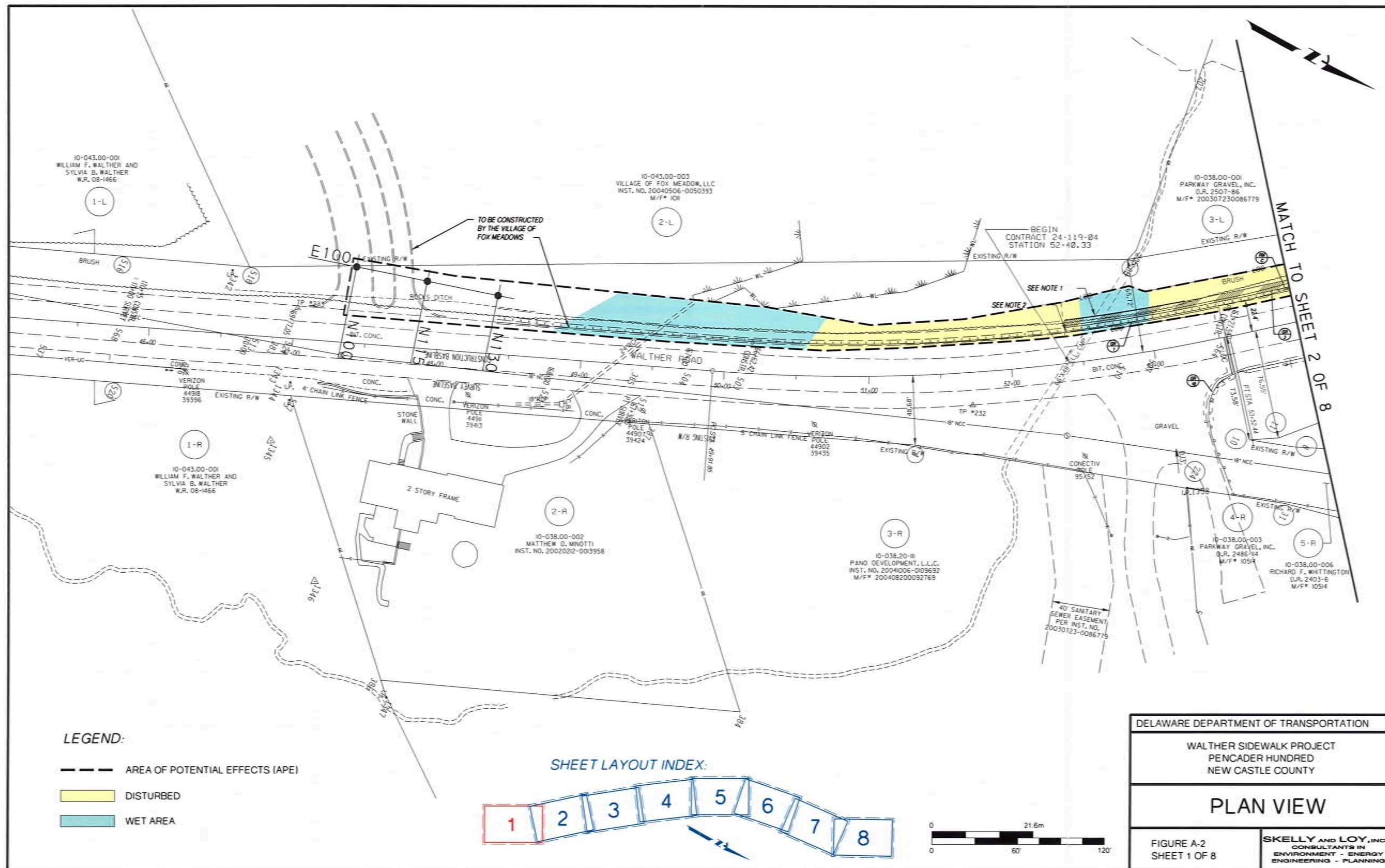
The Walther Sidewalk project is located adjacent to Walther Road on the Newark East, Delaware 7.5 minute topographic quadrangle (United States Geological Survey [USGS] 1993), in New Castle County (Figure A-1). The Delaware Department of Transportation (DelDOT) is proposing to install sidewalks for a distance of approximately 2,217.4 m (7,275.0 ft). As per an agreement with DelDOT, due to the small scale of the project, the proximity to the Route 40 Improvements Project, and the need to avoid duplication of background research effort, the negative results of the Walther Sidewalk geomorphology and archaeological Phase I survey are presented in this Management Summary Appendix to the Route 40 Improvements Project report. For information concerning the environmental setting and cultural contexts of the Walther Sidewalk project Area of Potential Effects (APE), the reader is referred to Sections 2.0 and 3.0 of this report.

2.0 Methodology

Mr. Kevin Cunningham of DelDOT and Mr. Christopher Espenshade of Skelly and Loy conducted a field view of this project on December 3, 2004. The mapping and field observations suggested that the majority of the project APE is located on previously disturbed lands and will not require archaeological survey (Figure A-2). Geomorphological investigations were used to confirm these disturbances. Only one portion of the project APE required subsurficial survey, based on the presence of intact sediments of the appropriate age to contain archaeological resources.

The purpose of the geomorphological investigations was to assess the nature of the landforms and soils within the project APE, and to determine if appropriate areas existed for the implementation of Phase I archaeological fieldwork. Geomorphological investigations included





MATCH TO SHEET 1 OF 8

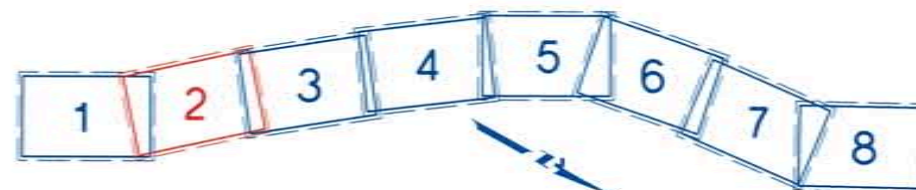
MATCH TO SHEET 3 OF 8

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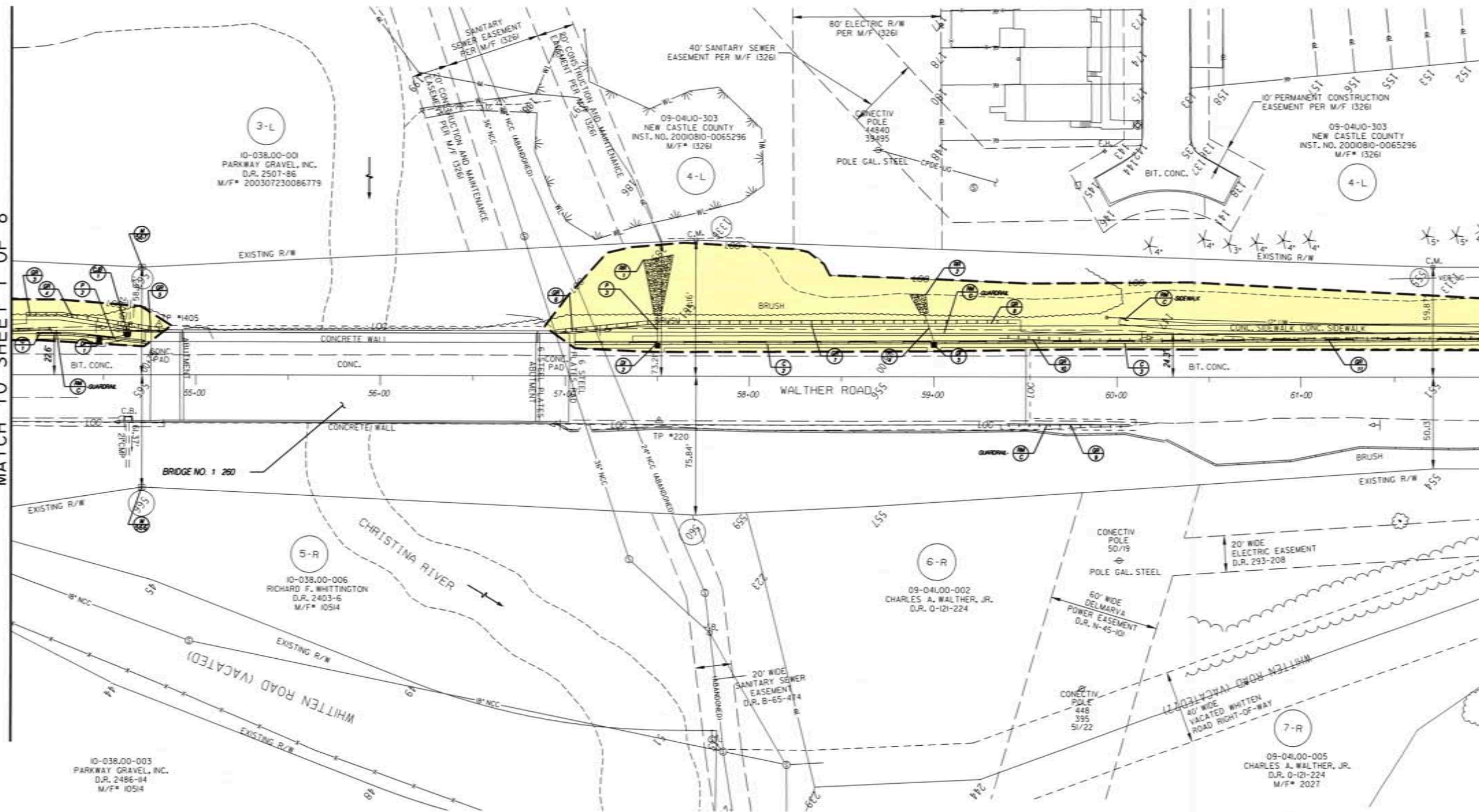
--- AREA OF POTENTIAL EFFECTS (APE)

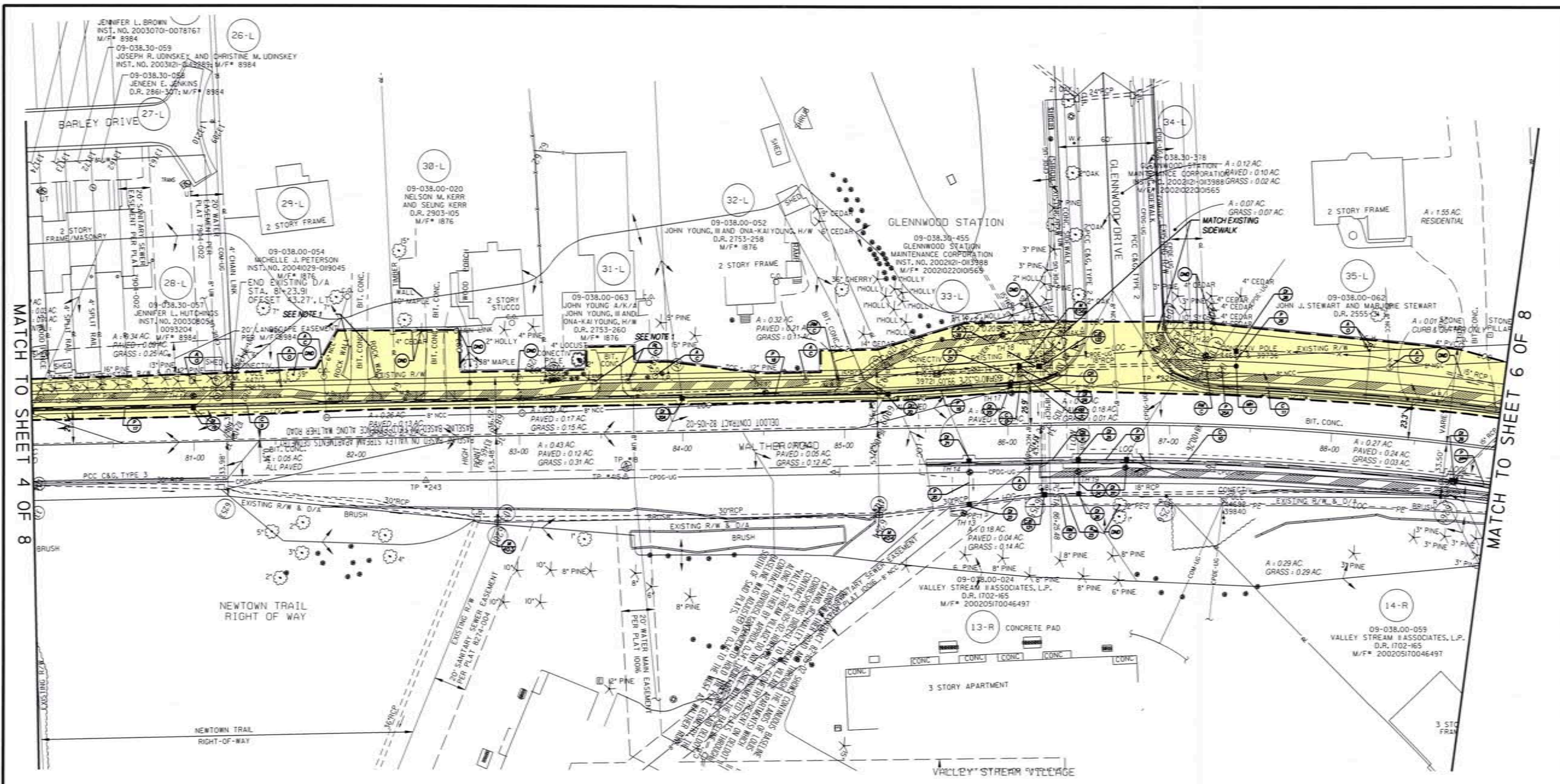
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DELAWARE DEPARTMENT OF TRANSPORTATION	
WALTHER SIDEWALK PROJECT PENCADER HUNDRED NEW CASTLE COUNTY	
PLAN VIEW	
FIGURE A-2 SHEET 2 OF 8	SKELLY AND LOY, INC. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

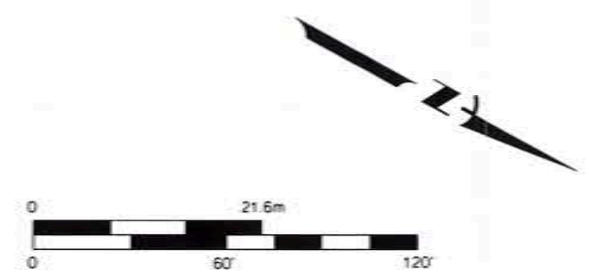
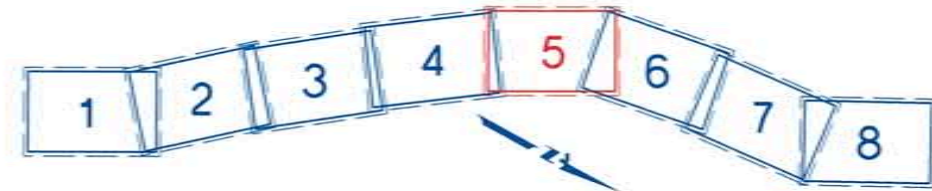




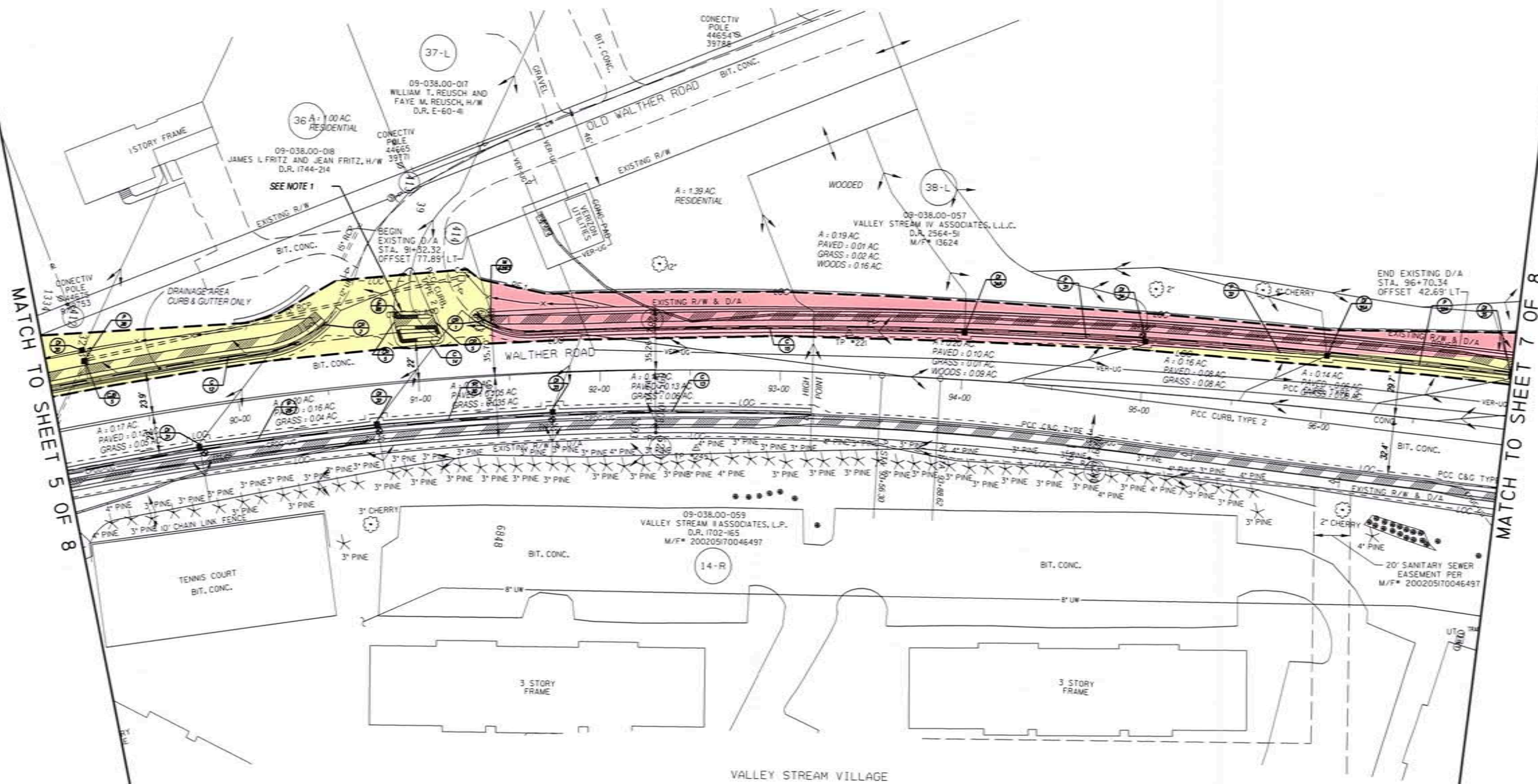
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- AREA OF POTENTIAL EFFECTS (APE)
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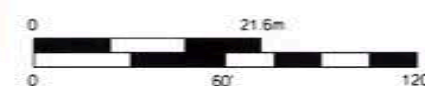
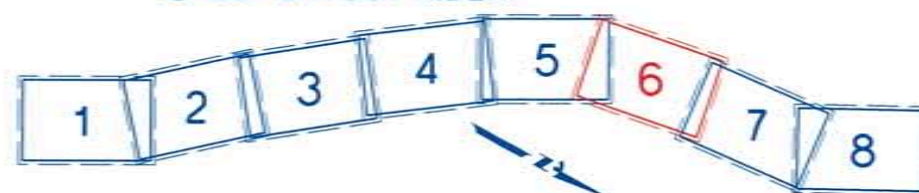
DELAWARE DEPARTMENT OF TRANSPORTATION	
WALTHER SIDEWALK PROJECT PENCADER HUNDRED NEW CASTLE COUNTY	
PLAN VIEW	
FIGURE A-2 SHEET 5 OF 8	SKELLY AND LOY, INC. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



LEGEND:

- AREA OF POTENTIAL EFFECTS (APE)
- DISTURBED
- STEEP (>15% SLOPE)

SHEET LAYOUT INDEX:



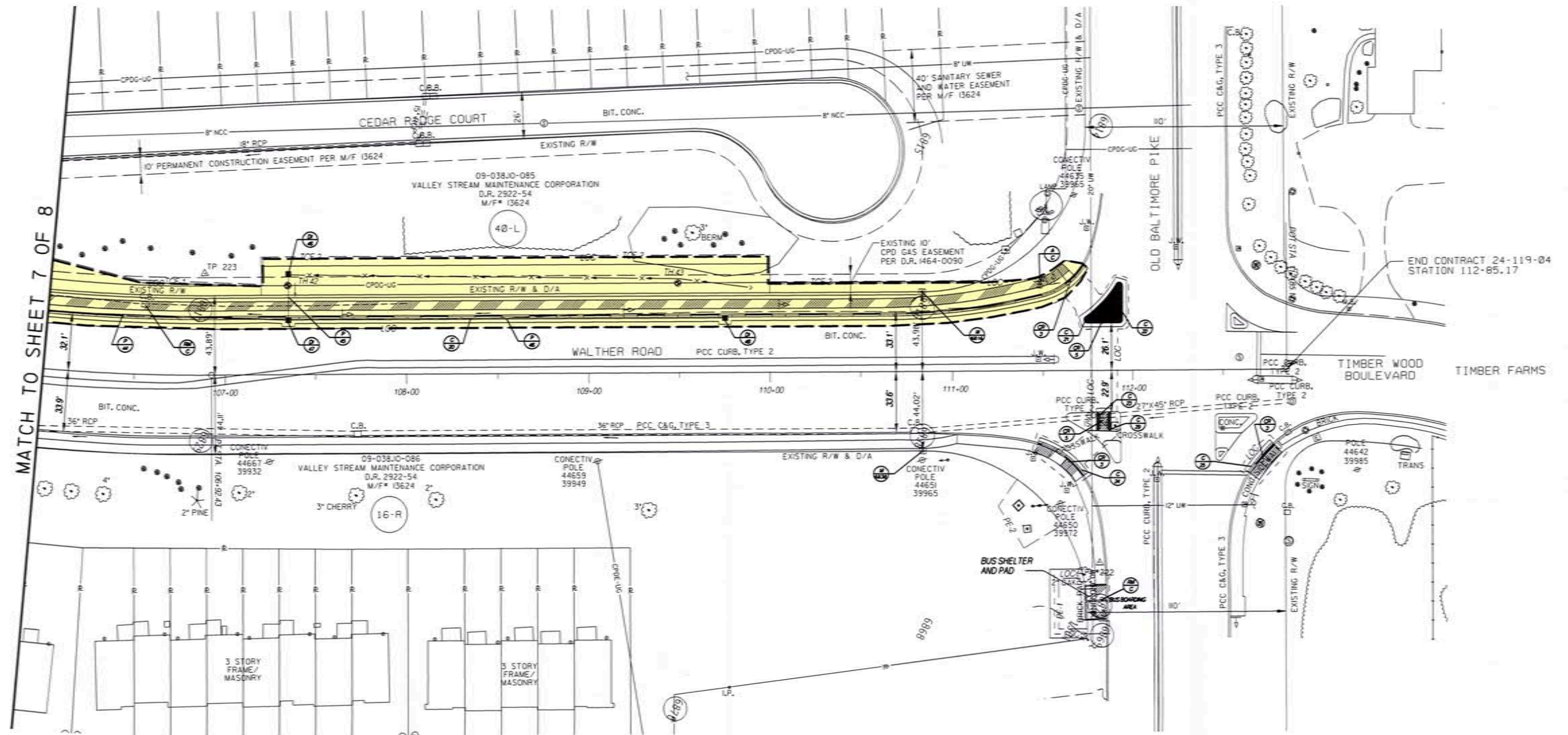
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WALTHER SIDEWALK PROJECT
PENCADER HUNDRED
NEW CASTLE COUNTY

PLAN VIEW

FIGURE A-2
SHEET 6 OF 8

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ENVIRONMENT - ENERGY
ENGINEERING - PLANNING



the examination of the soils/sediments *via* multiple, expedient hand-excavated auger borings. Several of the auger boring and shovel test pit (STP) profiles were described in detail according to the methods and nomenclature prescribed by the United State Department of Agriculture-Natural Resources Conservation Service (Schoeneberger 2002) and are shown in Appendix A-1.

The archaeological survey consisted of the emplacement and excavation of three hand excavated STPs in one portion of the project APE located near the southern terminus. Excavation of the STPS was accomplished in arbitrary 10.0 cm (3.9 in) levels within natural strata. In order to recover any cultural materials, all excavated sediments were screened through 0.64 cm (0.25 in) mesh hardware cloth. Information regarding soil morphology, texture, and color; stratigraphy; cultural material; inclusions; and disturbances were recorded on Skelly and Loy's standard excavation forms. All excavations extended through the plowzone to the culturally sterile subsoil, and were backfilled after completion. The ground surface was restored as closely to pre-excavation conditions as possible. Notes and photographs documenting the research during the Phase I survey were taken.

No artifacts were recovered and no cultural features were identified during the Phase I archaeological survey of the Walther Sidewalks Project APE; therefore, no artifact processing, analysis, or curation tasks are necessary.

3.0 Results

Prior to the initiation of the geomorphological investigations for the Walther Sidewalk Project, background research included the examination of the Delaware archaeological site files; the National Register of Historic Places (NRHP) on-line files; the historic resources inventory files; reports documenting previously conducted cultural resource studies in the area; relevant state-wide historic contexts; historic maps; and historic as-built roadway plans housed at the Delaware State Historic Preservation Office (SHPO) and DelDOT offices. The results of the background research indicated that no previously identified archaeological resources or NRHP-listed or -eligible properties are located within the sidewalk project APE, and based on its constricted size and location in a recently highly developed area, the potential for archaeological remains within the Walther Sidewalk Project APE is low.

The project APE is located within the Coastal Plains physiographic province, where the majority of soils are forming in old coastal alluvium which has been deeply weathered and leached of many minerals and nutrients. The soil profiles contain varying amounts of sand, silt,

and clay particles according to the conditions of sediment deposition and the location on the landscape. Most soils include a well developed argillic subsoil horizon, which indicates that they have been stable and exposed to *in situ* weathering throughout at least the Holocene period.

The following soils information is taken from the *Soil Survey of New Castle County, Delaware* (Matthews and Lavoie 1970). Under original, natural conditions, the most common soil found in the project APE is the Matapeake silt loam, a deep and well drained soil. Other soils originally occurring within the project APE are the Fallsington loam, the Keyport silt loam, the Sassafras sandy loam, and the Woodstown loam. Each of these soils formed in Coastal Plain sediments. These soils vary slightly in sediment grain size and in the degree of internal soil drainage. The Fallsington loam is poorly drained and is often saturated to the surface, and the other soil types are either well drained or moderately well drained. The field mapping for the *Soil Survey of New Castle County, Delaware*, was completed between 1943 and 1965. Since that time, much residential and some commercial development has occurred within the project APE, and the original soils have been extensively disturbed or completely excavated during the construction of existing structures, roadways, driveways, subsurface utilities, and surface and subsurface stormwater drainage networks.

Most areas exhibited such obvious prior excavation that no soil sampling was necessary (Photographs A-1, A-2, and A-3). Auger borings were taken within the areas which appeared to be less disturbed or intact. It was determined that only one portion of the project APE was not disturbed and was suitable for archaeological testing (Photograph A-4). Auger Borings 1 and 2, taken in two disturbed areas (Appendix A-1), were comprised of a truncated profile of Coastal Plain sediment (Figure A-3). Only the lower subsoil of the original soil remained intact. No testing was recommended within areas exhibiting this type of truncated stratigraphic profile.

The auger boring taken within the undisturbed portion of the project APE was comprised of a relatively intact soil. Three STPs were excavated within this area, and the stratigraphic profile of STP N100 E100 was examined and described (Figure A-4; Appendix A-1). This profile was comprised of a well developed profile forming in Coastal Plain sediment, with a plowed surface (Ap horizon) and deeply weathered subsoil (Bt horizon). No cultural materials were recovered from any of the three STPs.

One stream crossing occurs within the northern portion of the APE. An unnamed tributary flows west to east across the northern portion of the APE. This stream has been completely channelized within an artificial bed and no remnant of a former valley bottom remains, if one existed. The soil survey mapping of this creek bed shows a small flow through an upland soil type without a floodplain landform.



Photograph A-1. General view of northern terminus of project APE, facing south. Note the graded area adjacent to the roadway.



Photograph A-2. General view of central portion of project APE near Glennwood, facing south. Note existing curbs, utilities, drainage swales, and drainage stormwater grate.

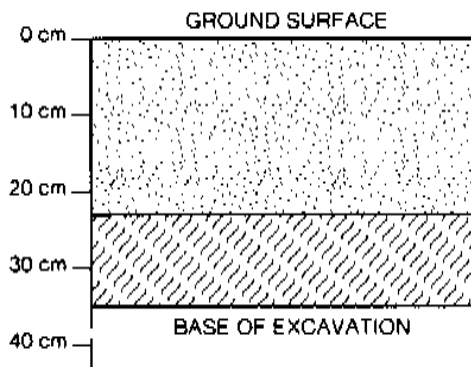


Photograph A-3. General view of central portion of project APE, north of Creekside Drive, facing south. Note fire hydrant, buried water lines, utilities, drainage swale, fencing, and landscaping with large conifers.



Photograph A-4. General view of portion of APE near southern terminus that was not disturbed and was surveyed.

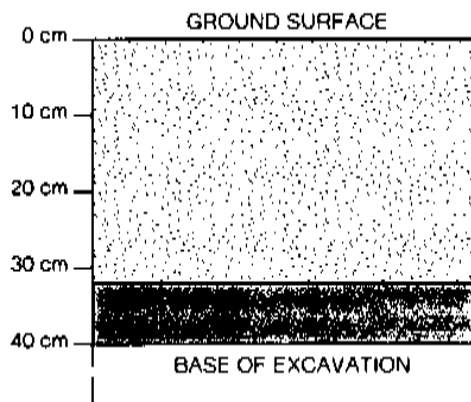
SOIL PROFILE AUGER BORING 1



C 10YR 5/3 Brown loam

2BC 10YR 5/4 Yellowish brown sandy loam, with few
10YR 5/6 Yellowish brown mottles

SOIL PROFILE AUGER BORING 2



C 10YR 5/3 Brown loam

2BC 10YR 5/4 Yellowish brown sandy loam, with 10%
fine gravels and 10YR 5/6 Yellowish brown
mottles

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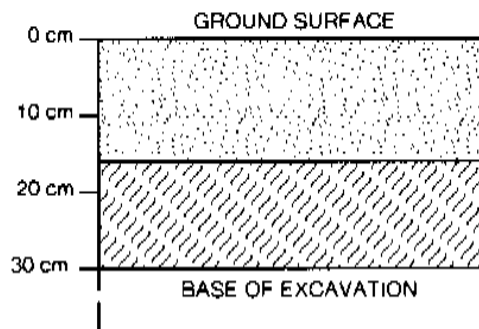
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SOIL PROFILES
AUGER BORINGS 1 AND 2

FIGURE A-3

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SOIL PROFILE SHOVEL TEST PIT N100 E100



Ap 10YR 3/2 Very dark grayish brown gravelly loam,
with 20% gravels

Bt 10YR 5/4 Yellowish brown very gravelly clay loam,
with 60% gravels

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WALTHER SIDEWALK PROJECT
PENCADER HUNDRED
NEW CASTLE COUNTY

SOIL PROFILE
SHOVEL TEST PIT N100 E100

FIGURE A-4

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The Christina River, a much larger stream, flows west to east within the southern portion of the APE, toward its confluence with the Delaware River approximately 24.0 km (14.9 mi) downstream (Photographs A-5 and A-6). The proposed sidewalk construction does not affect any portion of this river valley. The proposed project involves construction on only the bridge deck, and does not extend onto the hillsides or floodplain of the river.

Based on the results of the geomorphological investigations, only three STPs were necessary to test the only undisturbed portion of the project APE (see Figure A-2:Sheet 1). The three STPs were negative for cultural remains, and no foundations or other subsurface remains were identified within the Walther Sidewalk Project APE.

4.0 Recommendations

A Phase I archaeological survey was conducted by Skelly and Loy, Inc. for DelDOT's proposed Walther Sidewalk Project located in New Castle County. The project APE for the Phase I survey encompassed a total of approximately 1.82 ha (4.50 ac) located adjacent to Walther Road between Old Baltimore Pike and Route 40.

Background research indicated that no pre-contact or historic period archaeological sites were previously recorded in the archaeological APE. During a field view and geomorphological investigations, the majority of the project APE was determined to be disturbed (1.59 ha [3.93 ac]). Only mixed and truncated soil profiles are present in most of the APE. This lack of intact sediments with no potential to contain archaeological remains, precludes the need for Phase I archaeological survey in most portions of the Walther Sidewalk Project APE.

Only one portion of the project APE located near the southern terminus of the APE contained intact soils of appropriate age to contain archaeological resources. This small area (0.06 ha [0.14 ac]) was tested *via* the use of three STPs. No artifacts of any kind were recovered, and no evidence of subsurface cultural features was observed. Based on the lack of previously identified archaeological resources within the project APE, and the negative results of the current Phase I archaeological survey, the proposed Walther Sidewalk Project, as currently designed, will not affect any pre-contact or historic period archaeological resources, and no additional archaeological investigations are warranted.



Photograph A-5. View of northeast side of bridge over Christina River, facing northwest.



Photograph A-6. View of northeast side of bridge over Christina River, facing southeast.

5.0 References Cited

Matthews, E.D., and O.L. Lavoie

- 1970 *Soil Survey of New Castle County, Delaware*. United States Department of Agriculture, Soil Conservation Service. U.S. Government Printing Office, Washington, D.C.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson

- 2002 *Field Book for Describing and Sampling Soils*. Version 2.0. United States Department of Agriculture, Natural Resources Conservation Service. National Soil Survey Center, Lincoln, Nebraska. U.S. Government Printing Office, Washington, D.C.

United States Geological Survey (USGS)

- 1993a Newark East, Delaware topographic map, 7.5 minute quadrangle. U.S. Geological Survey, Denver.
- 1993b Saint Georges, Delaware topographic map, 7.5 minute quadrangle. U.S. Geological Survey, Denver.